

Claims 1-29 (canceled)

Claim 30 (Currently Amended). An arrangement for cooling a roll, the arrangement comprising:

a housing to be secured to the roll, the housing mounted for rotation about a hollow shaft, the shaft having a length and a longitudinal axis, and a an elongate cooling medium line conduit extending into the roll to convey cooling medium into the roll via the interior of the shaft, the external surface of the elongate cooling medium line and an internal surface of the shaft defining a cooling medium flowpath out of the roll, the cooling medium line remaining stationary when in use:

the elongate cooling medium line conduit connected to an elbow portion, a first length of the elbow portion extending from the inlet or outlet substantially perpendicular to the longitudinal axis of the shaft and a second length of the elbow portion extending from the first length in the longitudinal direction of the axis of the shaft, wherein the elongate cooling medium line conduit and elbow portion remain stationary as the housing rotates wherein the shaft comprises a first part over which the housing fits and a second part including a sealed distal end, wherein the second part of the shaft including the sealed distal end projects out of the housing away from a flange of the housing, and the inlet is positioned further away from the distal end of the shaft than the outlet, wherein the first length of the elbow portion extends through the longitudinally extending wall of the shaft and is fixed thereto to provide a substantially liquid tight seal.

Claim 31(Previously Presented). An arrangement according to claim 30, wherein the cooling medium line comprises an inlet.

Claim 32 (Previously Presented). An arrangement according to claim 30 including:

(i) a first cooling medium line to convey cooling medium into the roll via the interior of the shaft, the first cooling medium line comprising an inlet communicating with a first elbow portion, a first length of the first elbow portion extending from the inlet substantially perpendicular to the longitudinal axis of the shaft and a second length of the first elbow portion extending from the first length in the direction of the longitudinal axis of the shaft, the axes of the first and second lengths being in substantially the same plane; and

(ii) a second cooling medium line to convey cooling medium out of the roll via the interior of the shaft, the second cooling medium line comprising a flow path, including conveying cooling medium between the outer surface of the first cooling medium line and the internal wall of the shaft to an outlet.

Claim 33 (Previously Presented). An arrangement according to claim 30, wherein the internal wall of the elbow portion has a bend radius between the first length and the second length.

Claim 34 (Previously Presented). An arrangement according to claim 30, wherein the elbow portion includes mounting means for mounting the elbow portion to the shaft.

Claim 35 (Previously Presented). An arrangement according to claim 34, wherein the mounting means is an annular flange provided on the external surface of the first length of the elbow portion, the annular flange being adjacent the external wall of the shaft.

Claim 36 (Previously Presented). An arrangement according to claim 30, wherein the first length of the elbow portion is provided with external connection means and/or internal connection means for connecting a pipe for conveying cooling medium.

Claim 37 (Previously Presented). An arrangement according to claim 36, wherein the first length is provided with both external and internal connection means.

Claim 38 (Previously Presented). An arrangement according to claim 36, wherein the connection means comprises a threaded connection that engages a correspondingly threaded pipe connector.

Claim 39 (Previously Presented). An arrangement according to claim 30, wherein the second length of the elbow portion is provided with external connection means and/or internal connection means for connecting a conduit that conveys cooling medium.

Claim 40 (Previously Presented). An arrangement according to claim 39, wherein the second length is provided with both internal and external connection means so that two different radial sizes of conduit can be connected to the elbow portion.

Claim 41 (Previously Presented). An arrangement according to claim 39, wherein the connection means comprises one or more elongate ridges in the direction of the axis of the shaft on the internal and/or external surface of the second length of the elbow portion.

Claim 42 (Previously Presented). An arrangement according to claim 30, wherein the cooling medium line is substantially cylindrical.

Claim 43 (Previously Presented). An arrangement according to claim 30, wherein the distal end of the shaft is sealed.

Claim 44 (Previously Presented). An arrangement according to claim 30, wherein the proximal end of the shaft has an annular flange against which the housing abuts.

Claim 45 (Previously Presented). An arrangement according to claim 44, wherein a spacer is provided between the housing and the annular flange of the shaft so that the positioning of the housing on the shaft can be adjusted.

Claim 46 (Previously Presented). An arrangement according to claim 30 including a delivery flow path that delivers cooling medium into the roll via the interior of the shaft and a return flow path for outflow of cooling medium via the interior of the shaft.

Claim 47 (Previously Presented). An arrangement according to claim 46, wherein the delivery flow path comprises an inlet communicating with the elbow portion and a conduit connected to the second length of the elbow portion that delivers cooling medium into the roll, whereby at least part of the conduit is positioned in the interior of the hollow shaft along the axis of the shaft; and the return flow path conveys cooling medium between the outer surface of the conduit and the internal wall of the shaft to an outlet.

Claim 48 (Previously Presented). An arrangement according to claim 47, wherein the conduit is substantially cylindrical.

Claim 49 (Previously Presented). An arrangement according to claim 47, including a channel in the shaft communicating with the outlet, a first length of the channel extending from the outlet substantially perpendicular to the axis of the shaft and a second length of the channel extending from the first length in the direction of the axis of the shaft, the axes of the first and second lengths of the channel being in substantially the same plane.

Claim 50 (Previously Presented). An arrangement according to claim 49, wherein the internal wall of the hollow shaft tapers towards the second length of the channel.

Claim 51 (Previously Presented). An arrangement according to claim 49, wherein the walls of the channel are substantially rounded.

Claim 52 (Previously Presented). An arrangement according to claim 49, wherein the first length of the channel is internally threaded for engagement of a pipe connector.

Claim 53 (Previously Presented). An arrangement according to claim 30, wherein the shaft is provided with pressure release means for releasing internal pressure in the shaft when the internal pressure substantially exceeds a threshold pressure level.

Claim 54 (Previously Presented). An arrangement according to claim 53, wherein the pressure release means is provided by a portion of the shaft having a thinner wall than the wall of remainder of the shaft, the thinner walled portion being arranged to rupture when the internal pressure exceeds a threshold pressure level.

Claim 55 (Previously Presented). An arrangement according to claim 54, wherein the thinner walled portion of the shaft is provided by a bore in the wall of the shaft.

Claim 56 (Currently Amended). An arrangement for cooling a roll, the arrangement comprising a housing to be secured to the roll, a hollow shaft mounted for rotational movement within the housing and ~~[[a]]~~ an elongate cooling medium line conduit to convey cooling medium into the roll via the interior of the shaft, wherein the shaft is provided with pressure release means for releasing internal pressure in the shaft when the internal pressure substantially exceeds a threshold pressure level .

wherein the elongate cooling medium conduit remains stationary as the housing rotates.

Claim 57 (Previously Presented). An arrangement according to claim 56, wherein the pressure release means is provided by a portion of the shaft having a thinner wall than the wall of remainder of the shaft, the thinner walled portion being arranged to rupture when the internal pressure exceeds a threshold pressure level.

Claim 58 (Previously Presented). An arrangement according to claim 57, wherein the thinner walled portion of the shaft is provided by a bore in the wall of the shaft.